Air Pollution Control

JUN - 6 1986

RECEIVED

Corporate Office
Hoover Universal, Inc.
825 Victors Way
P.O. Box 1003
Ann Arbor, Michigan 48106
Tel. (313) 665-1591

Raymond Jusak
Corporate Environmental Engineer

HOOVER UNIVERSAL

June 5, 1986

Mr. Byron Lane, P.E.
Environmental Engineer
Department of Natural Resources
Fourth Floor
State Office Building
301 E. Louis Glick Hwy.
Jackson, MI 49201

Dear Mr. Lane:

The attached Plan involving closure at Universal Die Casting, Inc. is submitted for your review. I trust it meets the criteria directive you provided in your April 15, 1986 letter. Project duration is estimated to span forty-five (45) days after commencement, allowing for weather and other conditions beyond our control.

I will await your notification before proceeding. Thank you for your continued direction.

Sincerely,

Raymond Jusak
Corporate Manager of
Environment and Energy

RJ:mab

cc: M. O'Rourke
L. J. Smith
M. Frisch
L. Zackary

Universal Die Casting, Inc formerly Hoover Universal, Inc. Saline

CLOSURE PLAN

UNIVERSAL DIE CASTING, INC.

(formerly Hoover Universal, Inc.)

232 Monroe Street
Saline Michigan

UDC Sample Data

Sample	Aroclor 1242	Total PCB
1A	LD	LD
1B	LD	LD
2A	LD	LD
2C	LD	LD
3A	LD	LD
3C	LD	LD
4A	0.92 mg/kg	0.92 kg/kg
4C	1.20 mg/kg	1.20 mg/kg

LD - less than detection limit; limit ranged from 0.59 mg/kg to 0.67 mg/kg during this analysis.

Sample Date - 2/27/86

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

RONALD O. SKOOG, Director

Reply To:

4th Floor
State Office Building
301 E. Louis Glick Hwy.
Jackson, MI 49201

April 15, 1986

Mr. Raymond Jusak
Corporate Environmental Engineer
Hoover Universal, Inc.
825 Victors Way
P.O. Box 1003
Ann Arbor, Michigan 48106

Subject: Universal Die Casting, Inc.
Saline, Michigan

Dear Mr. Jusak:

Attached are the analytical results of the soil samples taken at the Universal Die Casting (UDC) Saline Plant site on February 27, 1986. You will note that low levels of PCB were present in two of the eight samples taken; no PCB was detected in the remaining samples.

This sampling work essentially completes that portion of the 1983 Hydrogeologic Evaluation pertaining to the black-oily substance (BOS) found to contaminate subsurface soils at the UDC plant site. A plan of remedial action should now be developed. This plan should contain provisions for ending the venting of BOS to the Saline River, and the prevention of its movement to adjacent properties. Please submit the plan to this office by May 30, 1986.

If you should have any questions or comments, feel free to contact me.

Sincerely,

Byron Lane

Byron Lane, P.E.
Environmental Engineer
Surface Water Quality Division
(517) 788-9598

BL:rg

Attachment

cc: Dan Judson, UDC
Matthew Frisch, GWQD, Geo.

Section I
Written closure plan

TABLE OF CONTENTS

DESCRIPTION OF CONDITIONS

Oil has been determined to exist in a soil stratum located within the southeast portion of property owned by Universal Die Casting, Inc., 232 Monroe Street, Saline, Michigan. The perimeter of the oil plume, its depth, and the groundwater flow direction has been determined.

The oil is stratified in a layer of sand and sand/pebbles which overlays a gray plastic clay. The oil impregnated layer occurs at a depth under the soil surface beginning at about 6'0" to 10'0" and proceding to the clay layer which is typically encountered at a depth of 10'0" to 12'0" from surface soil.

Utilizing this information, a plan of closure has been developed as follows.

CLOSURE PLAN

It is anticipated that closure will take place in five stages: cutoff wall, strip soil, excavate, sample/analyze, and backfill. The area containing oil as depicted in drawing S1 will be addressed. Details of each stage is provided below.

Cutoff Wall - on all boundaries except riverside, a ditch approximately 2' 0" in width (see detailed drawing D1) will be installed around the perimeter of the area containing oil (see drawing S2). This wall will consist of a soil type that has a permeability coefficient sufficient to minimize infusion of groundwater into the work area and simultaneously restrict oil from exuding out of the area. The wall will be placed at a depth extending into the underlying clay structure forming a keyed in dike.

The work area bordering the Saline River likewise will be isolated by a soil barrier (see detail drawing D2) which will connect to the soil walls extending from the soil portions of the project. Thus the work area will be protected from internal/external liquid migration during subsequent closure stages.

Strip Soil - within the boundaries of the cutoff wall visually clean surface soil will be stripped and stockpiled outside of the boundaries for later use as backfill.

Excavation - Contaminated soil will be excavated and loaded onto transport vehicles for appropriate disposal. Excavation will occur from within the cutoff wall boundaries extending to the depth of underlying clay.

Free liquid concentration due to rainfall or as encountered during excavation will be evaluated for separation (oil/water) qualities. Clean water, that which is determined to contain less than 10.0 mg/l of oil will be discharged to the Saline River. Free oil will be evacuated for proper disposition (reclaim/ disposal).

If sufficient oil/water separation is not attainable, free liquid will be solidified by add mixing a solid stabilizer (lime, flue dust, etc.) within the cutoff wall boundary. The solidified mixture will then be removed for disposal.

Sampling/Analysis - samples will be retrieved from points of approximate equal distribution throughout the work area (see drawing S2). Samples will be extracted using a trier from a depth beginning 4" to 6" beneath sample soil surface and progressing to a total depth of 12" to 18". Nine samples in total will be taken.

Samples will be evaluated for oil and grease content using sample analysis method 413.1 as given in Test Methods For Analysis of Water and Wastes, publication EPA-600/4-79-020. The area intersecting sample points between each sample point that tests above an oil and grease concentration of 10.0 mg/l will be excavated an additional depth of 18" and resampled: this process will be repeated until a clean area is determined.

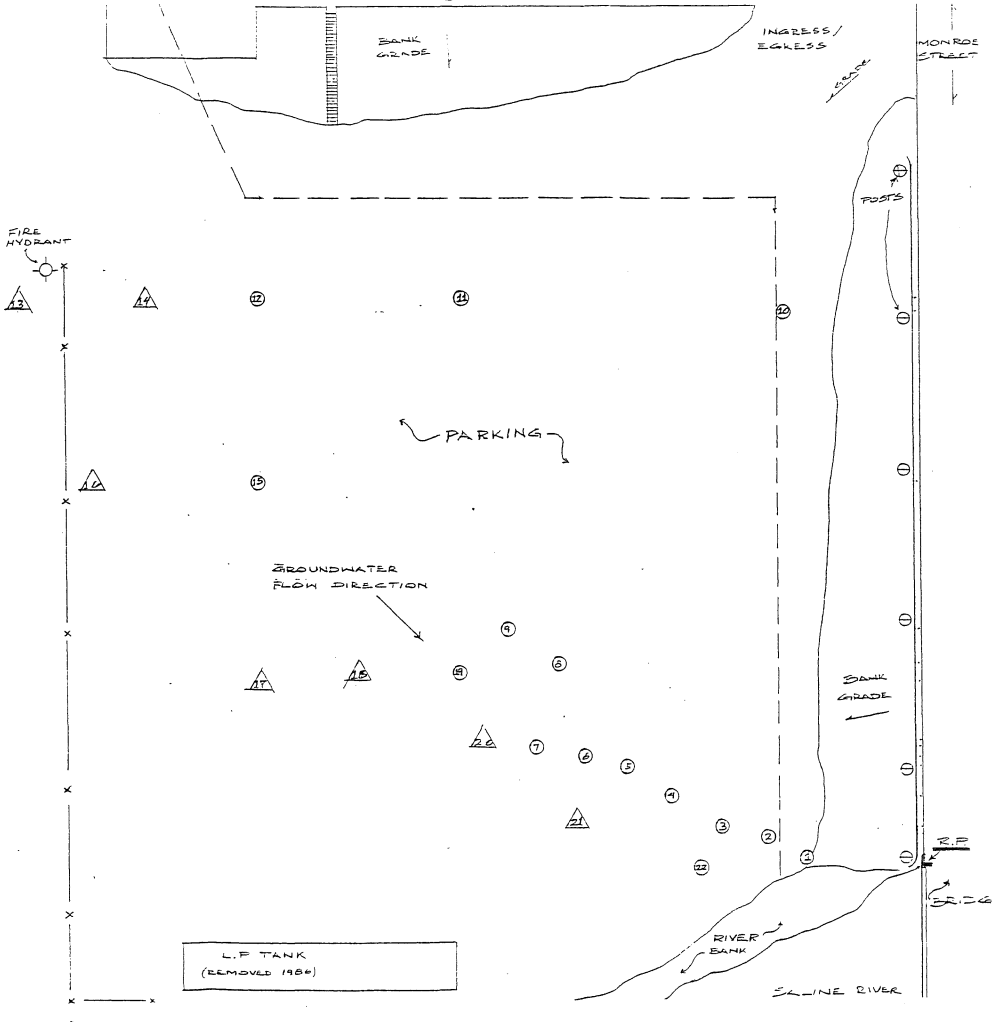
Backfill - The entire work area will be backfilled utilizing stockpiled soil and clean soil fill. Final grade will be returned to original elevations. Barrier soil used at the river will be placed within original bank boundaries. The river bank will be restabilized with rock or appropriate material to prevent undo erosion.

BORING POINT	DISTANCE IN FEET FROM R.P. L NORTH	WEST
1	3	24
2	6	33
3	9	44
4	15	54
5	22	64
6	24	74
7	26	84
8	44	78
9	52	89
10	120	28
11	123	99
12	123	143
13	123	194
14	123	165
15	93	143
16	83	183
17	40	143
18	42	122
19	42	100
20	27	93
21	11	74
22	0	48

LEGEND

○ = CONTAMINATED SAMPLES

△ = CLEAN SAMPLES



RSAL DIE CASTING, INC.
LY-HOOVER UNIVERSAL)
ONROE ST., SALINE, MICH.

S1

1" = 20'-0"

5/25/86

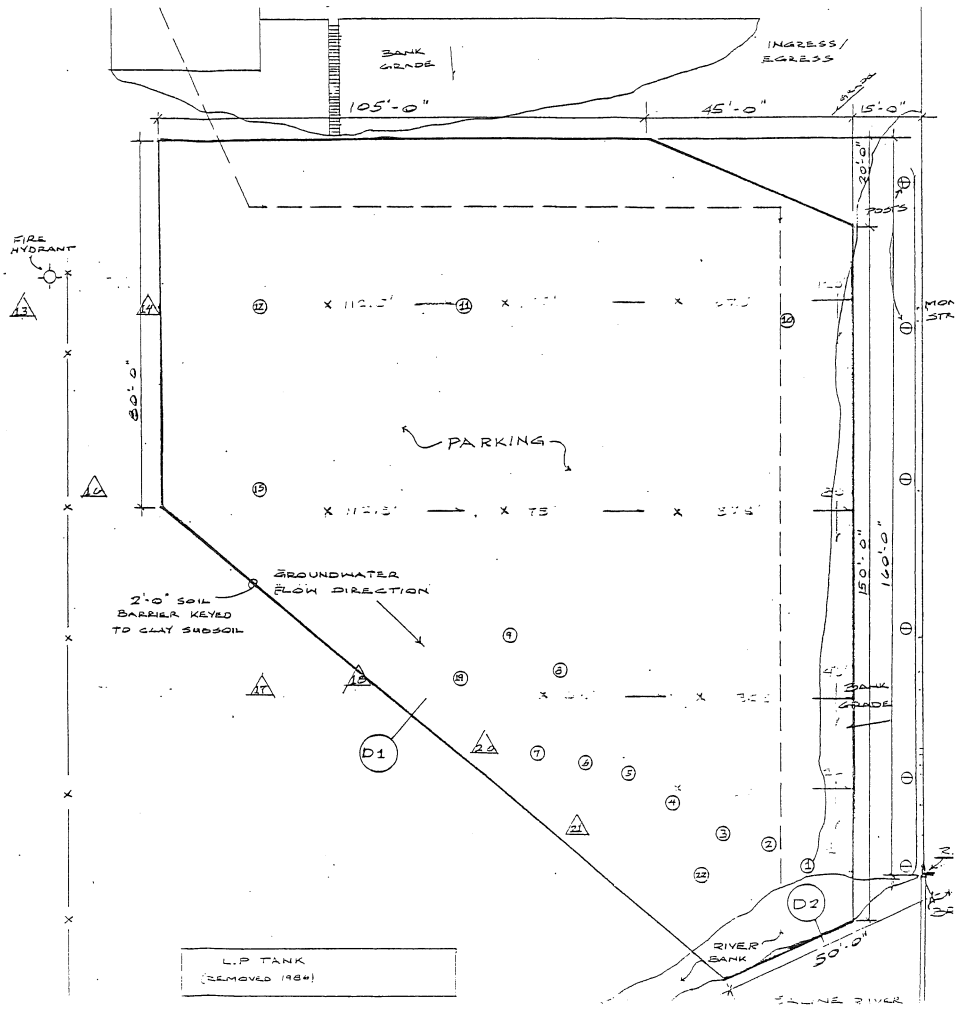
BORING POINT	DISTANCE IN FEET FROM S.S.L. NORTH	WEST
1	3	24
2	6	33
3	9	44
4	15	54
5	22	64
6	24	74
7	26	84
8	44	78
9	52	89
10	120	28
11	123	99
12	123	143
13	123	194
14	123	168
15	83	143
16	83	183
17	40	143
18	42	122
19	42	100
20	27	93
21	11	74
22	0	48

LEGEND

○ = CONTAMINATED SAMPLES

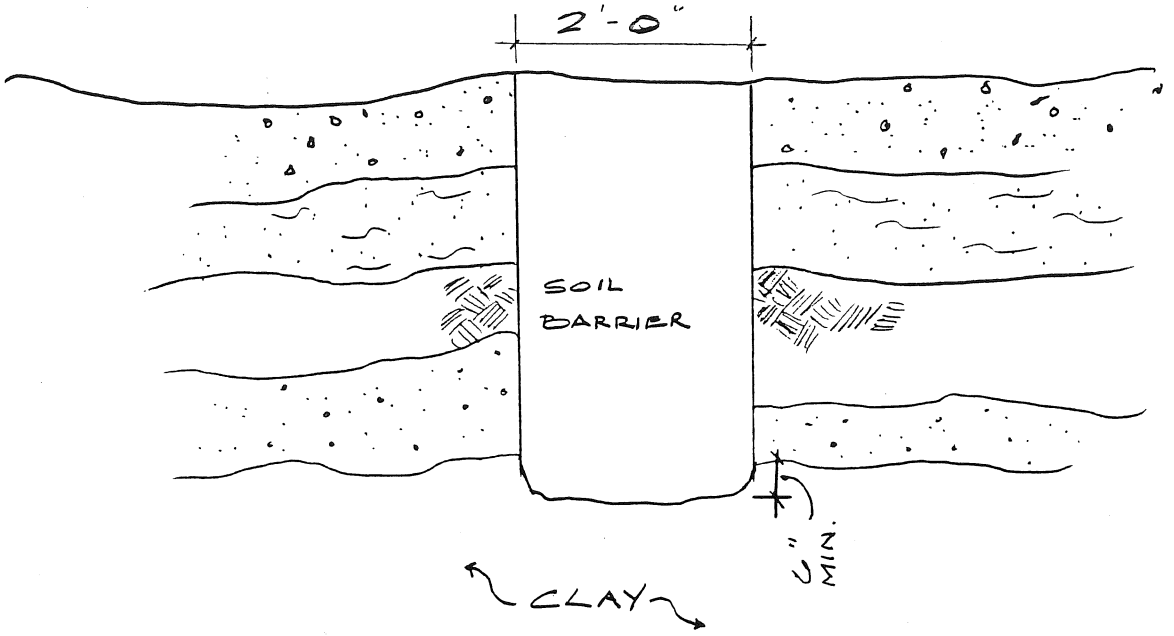
△ = CLEAN SAMPLES

X : SAMPLE [illegible]

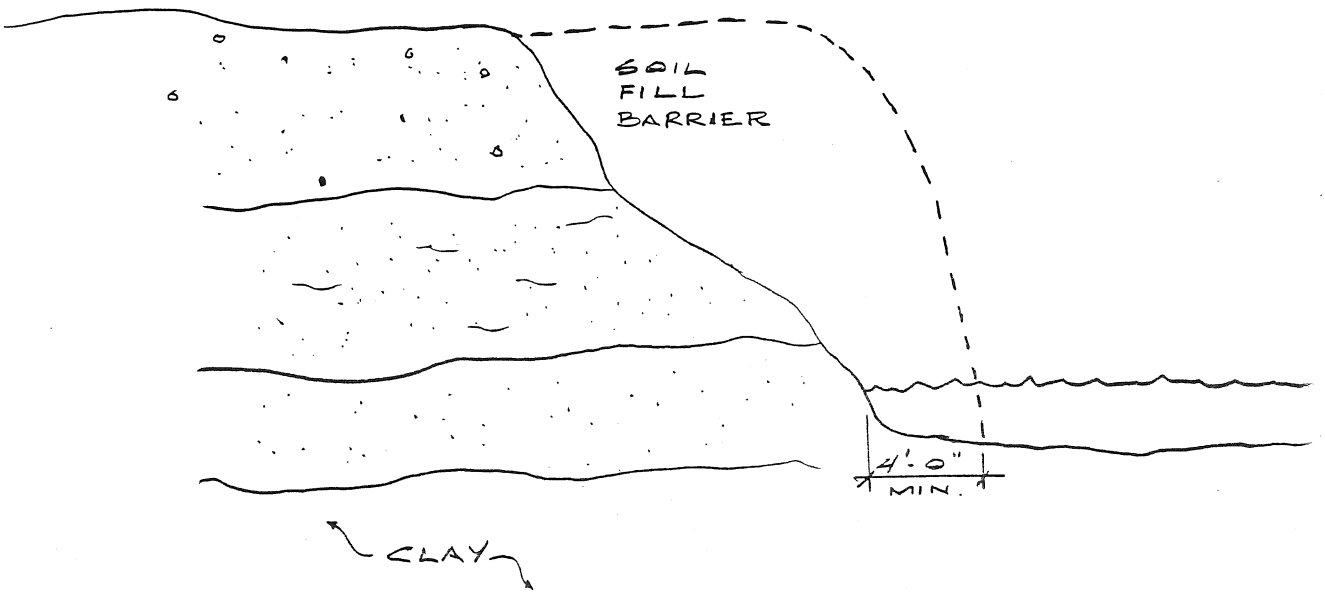


ERSAL DIE CASTING, INC.
1 (Y-HOOVER UNIVERSAL)
MONROE ST, SALINE, MICH.
S2
SCALE: 1" = 20'-0"

Section IV
Barrier details



D1



D2

Section V - Logs of
sample borings

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B1

Project Name: Universal Die Casting Date of Boring: 04-24-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND, medium, brown, fill, moist	3'0"						
Concrete	3'6"						
SAND & STONES, medium, brown, occasional concrete	7'6"						
SAND, coarse, black, wet	11'0"						▽ Heavy Groundwater Encountered
SILTY CLAY, grey, moist	15'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B2

Project Name: Universal Die Casting Date of Boring: 04-24-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, moist	2'0"						
SAND & SILT, medium, brown, moist	7'0"						▽ Heavy Groundwater Encountered
SILTY CLAY, organic	8'0"						
SAND, coarse, black & grey, wet	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B3

Project Name: Universal Die Casting Date of Boring: 04-24-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	3'0"						
SILT, SAND & CLAY, variegated, moist	8'6"						▽
SAND, coarse, grey and black, wet	9'6"						Heavy Groundwater Encountered
SILTY CLAY, grey, moist	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B4

Project Name: Universal Die Casting Date of Boring: 04-24-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND, CLAY & STONE, fill, moist	8'3"						▽
SAND, coarse, grey and black, wet	10'0"						Heavy Groundwater Encountered
SILTY CLAY, grey, moist	15'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B6

Project Name: Universal Die Casting Date of Boring: 04-24-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND, SILT & CLAY, fill, moist	4'0"						
CLAY, organic, moist	9'6"						▽ Heavy Groundwater Encountered
SAND, coarse, grey, and black, wet	11'0"						
SILTY CLAY, grey, moist	12'6"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B7

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	2'0"						
SILT & CLAY, organic, moist	8'6"						▽ Heavy Groundwater Encountered
SAND, medium, grey & black, wet	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B8

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	3'0"						
CLAY, organic, moist	8'0"						▽
SAND, medium, grey & black, wet	9'0"						Heavy Groundwater Encountered
SILTY CLAY, grey, moist	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B9

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	3'6"						
SILTY CLAY, organic, moist	7'6"						▽
SAND, coarse, grey & black, wet	9'6"						Heavy Groundwater Encountered
SILTY CLAY, grey, moist	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B10

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND, CLAY & STONES, medium, fill, moist	8'0"						
SAND, black, mix, wet	8'6"						Heavy Groundwater Encountered
CLAY, organic, moist	9'6"						
CLAY, variegated, moist	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B11

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	3'0"						
SAND & SILT, medium, brown, moist	8'0"						▽ Heavy Groundwater Encountered
SAND, coarse, grey & black, wet	10'6"						
SILTY CLAY, grey, moist	12'6"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B12

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	2'0"						
SAND & SILT, medium, brown, moist	7'0"						
SILT & CLAY, organic, moist	9'0"						▽
SAND, medium to coarse, grey and black, wet	11'6"						Heavy Groundwater Encountered
SILTY CLAY, grey, moist	12'6"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B13

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND, medium, brown and clay, content, moist	6'0"						▽ Medium Groundwater Encountered
SILT & CLAY, variegated, moist, layers of peat	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B14

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	2'6"						
SAND & SILT, medium, brown, moist	7'0"						
CLAY, organic, moist	9'0"						▽
SAND, brown, coarse, wet	10'0"						Heavy Groundwater Encountered
SILTY CLAY, grey, moist End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B15

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	3'6"						
CLAY, organic, moist	7'6"						▽ Heavy Groundwater Encountered
SAND, coarse, grey & black, wet	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B16

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & SILT, medium, fill, moist	3'0"						
CLAY, organic, moist	7'0"						▽ Heavy Groundwater Encountered
SAND, medium, grey, wet, and streaks of peat	9'0"						
SILTY CLAY, grey, moist	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B17

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill	2'6"						
CLAY, organic, moist	4'0"						
SAND & SILT, medium, variegated, moist	6'0"						▽ Heavy Groundwater Encountered
SAND, coarse, brown, wet and streaks of peat	8'0"						
SILTY CLAY, grey, moist	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B18

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	2'6"						
SILT & CLAY, variegated, moist	5'0"						▽ Heavy Groundwater Encountered
CLAY, organic, moist	6'6"						
SAND, coarse, grey, wet	8'0"						
SILTY CLAY, grey, moist	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B19

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	2'0"						
SAND & SILT, medium, variegated, moist	4'0"						
CLAY, organic, moist	7'0"						▽ Heavy Groundwater Encountered
SAND, medium to coarse, grey and black, wet	8'0"						
SILTY CLAY, grey, moist	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B20

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	2'0"						
SAND & SILT, medium, brown, moist	4'0"						No Groundwater Encountered
CLAY, organic, moist	9'0"						
SILTY CLAY, grey, moist	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B21

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	2'0"						
SAND & SILT, medium, brown, moist	6'0"						▽
SAND, coarse, grey, wet	9'0"						Heavy Groundwater Encountered
SILTY CLAY, grey, moist	10'0"						
End of Boring							

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring B 22

Project Name: Universal Die Casting Date of Boring: 04-25-85

Site: Saline, Michigan Project No.: 407-55006

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
SAND & STONES, medium, fill, moist	3'6"						
CLAY, organic, moist	7'6"						▽
SAND, coarse, grey & black, wet	10'6"						Heavy Groundwater Encountered
SILTY CLAY, grey, moist End of Boring							